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Oral | Symbol M (Multidisciplinary and Interdisciplinary) | M-TT Technology & Techniques

## [M-TT41\_28PM2] Mapping and spatial representation in geoscience

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Mon. Apr 28, 2014 5:06 PM - 5:57 PM 422 (4F)

In geoscience, spatial structure of the object are important subjects and their representation is necessary. This session discusses preparation, visualization and analysis methods of spatial data and their application to science and human society, aiming at the development of mapping and other spatial representation methods.

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5:06 PM - 5:21 PM

## △[MTT41-P01\_PG] Publication of redesigned multicolor 1:25,000 topographic maps

3-min talk in an oral session

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Keywords: 1:25,000 topographic map, NSDI Act of Japan, Digital Japan Basic Map, process printing

With rapid development of the information and communication technology, the national basic map accomplishes a big change. As for the 1:25,000 topographic map produced by the Geospatial Information Authority of Japan ("GSI"), which underpins the geo-science studies, publication of newly designed multicolored 1:25,000 topographic map was started from November 2013, with different production process and more detailed contents which the topography was easy to understand. New 1:25,000 topographic map is based on "digital Japan basic map (DJBM)", and the production process was greatly changed. A Plotting work using aerial photo, which was the biggest characteristic of the past topographical map making, is not included in the process, and a part of the vector data in the digital Japan basic map is directly clipped and printed. It is enactment of "the Basic Act on the Advancement of Utilizing Geospatial Information (NSDI act of Japan)" of 2007 that became the starting point of such a change. By this law, it was prescribed in particular that the government shall prepare and use "the fundamental geospatial data (FGD)" as a standard of the positions on the digital map. The GSI executed the production of FGD utilizing 1:2,500 city planning base map and 1:25,000 topographic map to mostly complete for the whole country by the end of 2011, and produced DJBM using FGD as a frame. New 1:25,000 topographic map is based on DJBM, which means that the contents became more detailed than the conventional one. Furthermore, introduction of process printing enabled multicolor production, and some expression methods were realized for the first time. Contents becoming more detailed means that the information becomes the precision of 1:2,500 level in city planning area. This comes from that DJBM is maintained at 1:2,500 level in the city planning area, where in the area except it at 1:25,000 level. All the buildings are displayed without being generalized even in the crowded city areas. In addition, the indication density of the road rises because all the roads are displayed without thinning. Introduction of process printing allowed to add green shadows to grasp the topography intuitively. Orange colored buildings can avoid the congestion with roads or the place names. In addition, expressions using various colors improved the readability of the topographic map, e.g., expressways, national highways and public roads are colored in green, red and yellow respectively, and national highway numbers are displayed in

inverse triangle type of the blue. Besides, GSI started to present "digital topographic map 25,000" to provide image data clipped from DJBM online using internet from 2012. Users can choose the central position, size and the direction of the map image depending on the purpose of use, and can choose colored/monochromatic map and with/without the shadows. It makes it easier to use it as the background map of geo-science study. As for 1:25,000 multicolored topographical map, around ten sheets a month are published newly for the time being, and conventional topographic maps are going to be replaced several years later.